

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2004/002181

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 C12N 15/70

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 C12N 15/70, C12N 15/31, C12N 15/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean Patents and applications for inventions since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKIPASS, WPI, USPTO, PAJ, PubMed "fadL, Escherichia coli, outer membrane protein, expression vector, display, lipase, etc."

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	J. Biol. Chem., Vol.268, No.21, 25 Jul. 1993, pp.15469-15476, Kumar, GB, Black, PN: "Bacterial long-chain fatty acid transport. Identification of amino acid residues within the outer membrane protein FadL required for activity"	1 - 19
Y	Arch. Biochem. Biophys., Vol.377, No.2, 2000, pp.324-333, Cristalli, G. et al.: "The amino-terminal region of the long-chain fatty acid transport protein FadL contains an externally exposed domain required for bacteriophage T2 binding"	1 - 19
Y	KR 2003-81548 A (Korea Advanced Institute of Science and Technology) 22 Oct. 2003 see the whole document	1 - 19
Y	J. Biotechnol., Vol.96, No.2, 2002, pp.129-154, Samuelson, P. et al.: "Display of proteins on bacteria"	1 - 19
Y	KR 2000-56440 A (Korea Advanced Institute of Science and Technology) 15 Sep. 2001 see the whole document	1 - 19
Y	KR 2003-14959 A (Korea Advanced Institute of Science and Technology) 20 Feb. 2003 see the whole document	1 - 19

Further documents are listed in the continuation of Box C.

See patent family annex.

- * Special categories of cited documents:
- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

22 MARCH 2005 (22.03.2005)

Date of mailing of the international search report

22 MARCH 2005 (22.03.2005)

Name and mailing address of the ISA/KR



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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material

a sequence listing
 table(s) related to the sequence listing

b. format of material

in written format
 in computer readable form

c. time of filing/furnishing

contained in the international application as filed
 filed together with the international application in computer readable form
 furnished subsequently to this Authority for the purposes of search

2. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2004/002181

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 2000-56440 A	15 Sep. 2000	US 6274345 B1	14 Aug. 2001
KR 2003-14959 A	20 Feb. 2003	WO 03/16538 A1	27 Feb. 2003
		US 2005-19857 A1	27 Jan. 2005
		CN 1466628 A	07 Jan. 2004